RP

# University of Hawaii at Manoa

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October 15, 1986

**RP: 0064**

Mr. Edward Yamada
Environmental Protection and Health Services Division
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Yamada:

Modification of
National Pollutant Discharge Elimination System (NPDES)
Permit #HI-0021059
Marine Culture Enterprises (MCE)
Laie, Kahuku, Oahu

The proposed modifications to the effluent limitations cited in the present NPDES permit for MCE's discharge at Kahuku, Oahu have been reviewed by Alison Kay, Zoology; Keith Chave and Frank Sansone, Oceanography; Stephen Smith, Hawaii Institute of Marine Biology; David Robichaux, Agricultural Engineering; and Michael Tokushige, Environmental Center.

We were pleased to note that two of the recommendations provided in our July 23, 1986 letter (copy enclosed) regarding the need to quantitatively examine the fate of the effluent constituents in the biological ecosystem and to require concurrent evaluation of water pollution control abatement systems during the life of the permit, have been incorporated into the proposed permit (page 2).

The long-term effects of the discharge on the coastal ecosystem at Kahuku remain quite uncertain. Not only is the area of the influence of the effluent experiencing a major change in the algae and fish communities but we understand that shrimp are escaping from the pens in such numbers that local fishermen are regularly collecting them in bulk quantities from ponds in the adjacent coastal waters (as much as 200 lbs. was reported to us in one case). The importance of long term monitoring and quantitative data on the fate of the effluent constituents (including the macro fauna) in the receiving environment cannot be over estimated.

With respect to the evaluation of abatement systems, (p. 6, 2b), we understand that several researchers at the University of Hawaii are actively working on biological nutrient uptake systems that may have some application to this project. MCE and AECOS may find it helpful to contact these researchers for their expertise.

In developing the proposed standards four tables of the effluent constitutents have been included in the permit. The first table (p. 2) describes the present discharge. The second (p. 2) provides adjusted "interim effluent limitations" (based on Facility Performance). The third is yet a different set of values representing 30-day average and daily maximum discharge concentration limits, and the fourth table provides the proposed final effluent limitations. The allowed concentrations in the second table of values are about 25 percent, on the average, higher than the values presently approved. Values for the 30-day average in the third table have been rounded upward slightly as compared to the second table, and a daily maximum is included. The daily maximum figure represents a significant (100 percent) increase over the 30-day average figure for total Kjeldahl nitrogen (4000 ug/l to 8000 ug/l) and several other constitutents are permitted a "daily maximum" exceeding 30 percent of the 30-day average value. In the fourth table, we note that the proposed final "30-day average" effluent limitations will assume the previously designated "daily maximum" values and no "daily maximum" values will be included in the final discharge permit. Since all monitoring and evaluation of the fate of the effluent constitutents on the biological environment will have occurred at the interim effluent limitation figures, what is the basis being used to justify the significant increases in these concentrations for the proposed final effluent limits? Why are no limits placed on copper or formaldehyde?

According to the methodology provided in the proposed permit limitations (p. 3), the selection of the various concentration limitations proposed for the effluent discharge are based on the quality of the effluent that has been discharged to date excluding some extreme values discharged in July and August 1985, (due to non-standard feed supply practices). At this time, there is apparently no relationship between the proposed effluent limitations and any environmental effects of the discharge to the receiving waters. The figures merely represent values based on meeting the existing concentrations in the discharge water approximately 93 to 94 percent of the time. Is this an acceptable "methodology" to DOH and EPA?

Perhaps DOH should reconsider the water quality standards for the Kahuku area and the rationale for their values in light of the optimum uses of that coastline. The possibility of redesignating that coastal area, perhaps on a temporary (but long term i.e. 10-20 years) basis as an acceptable site for the disposal of nutrient rich aquaculture effluents should be discussed. This is not to imply our advocacy of this designation, only our suggestion that it be rationally evaluated.

If the MCE discharge could be limited to high nutrient pollutants, free of toxic chemicals, the discharge of aquaculture wastes at Kahuku may be environmentally more appropriate than the precedent establishing rationale of the methodology used in this proposed permit. This would be particularly true if similar methodology standards were applied at even more sensitive coastal systems. The issue should be examined.

We appreciate the opportunity to offer our comments on this proposed permit modification.

Yours truly,

Jacquelin N. Miller
Acting Associate Director

Enclosure

cc: OEQC
Patrick Takahashi
Alison Kay
Keith Chave
Frank Sansone
Stephen Smith
David Robichaux
Michael Tokushige